

UNAM The Grolier Codex



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Introduction

The Grolier Codex is the last Maya document discovered up to day. It was found in 1965 in Chiapas (Mexico). Radio-carbon dating of one of its free standing sheets of paper, situated in 1230 ± 170 AD matching the fall of the Maya civilization when absorbed by the Totelcas. However, specialists are not keen to accept its authenticity as it bears unusual iconographical content. PIXE and RBS studies have been carried out in order to discard the presence of modern materials within the preparation layer and pigments.

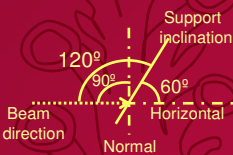
The codex mistakes

- Numeric system and the position of numbers is not correct according to other codex.
- Anomalies in the content of the Venusian calendar (Bad omen not related to Venus).



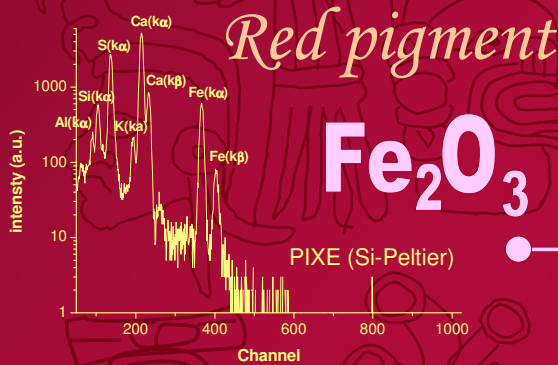
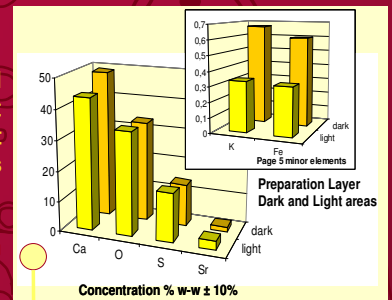
SET-UP

Proton Beam 3MeV
Intensity current 1nA
Si (Peltier) 40° beam direction, He flux
LEGe 40° beam direction, 68µm Al absorber
RBS 45° beam direction



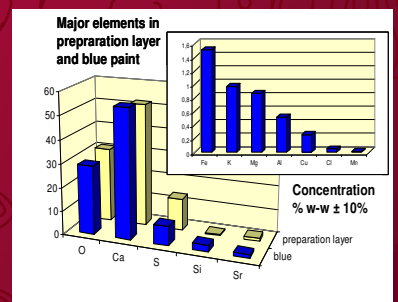
Preparation layer

PIXE reveals major elements such as Ca, O and S for the preparation layer in concentration that matches hydrated CaSO_4 . RBS did not detect the presence of carbon, therefore carbonates are considered to be absent.

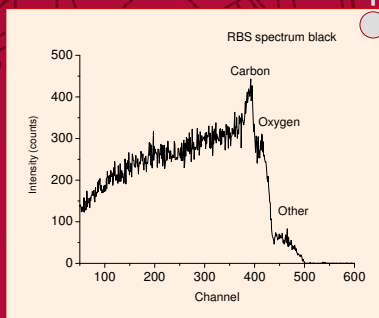


The large amount of iron in the red areas together with elements present in soil is characteristic of impure red ochre: Fe_2O_3 + clay elements.

Blue pigment



Black pigment



Carbon

RBS revealed the presence of carbon in the black pigments, thus indicating the presence of carbon black.

Blue Maya pigment is made of organic colorant indigo fixed on to a paligorskite clay. RBS spectra showed the presence of carbon perhaps indicating the presence of some organic substance. PIXE spectra threw composition of some kind of clay. However it is not possible to assure the use of Blue Maya with these techniques and further analyses ought to be made for its characterization.

Acknowledgements

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